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The Social Context of Mental Illness and Violence*

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For years a debate existed in the literature concerning whether or not mentally ill persons were more dangerous than others. Empirical work was hampered by conceptual and methodological shortcomings, and was therefore unable to settle the debate. Recently, methodologically sophisticated studies have produced evidence which indicates a modest association between active major mental disorders and violence. While some interpret this association to mean that mental illness or particular symptoms directly cause unwarranted physical aggression, this paper examines the case for the social context establishing socializing and environmental conditions which are causal in both violence and the development of mental disorder. It reviews the literature, indicating lacunae in our knowledge base, and posits a causal model which links social stratification with both mental illness and violence through the structured types of strains, events, situations and persons an individual experiences as an integral part of life.

The public tends to hold a stereotypical image of mentally ill persons as dangerous and unpredictable. More specifically, the image is of persons who unexpectedly lash out violently towards others (Gerbner et al. 1981; Link et al. 1987; Monahan 1992; Nunnally 1961; Rabkin 1972, 1974; Steadman and Cocozza 1978; Weiss 1986). Some early empirical studies gave support to this stereotype (Lagos, Perlmutter, and Suefinger 1977; Rofman, Askinazi, and Fant 1980; Sosowsky 1980). Among social scientists, however, a strong intellectual tradition developed which held that the stereotype was false and that mentally ill persons were no more dangerous than others (Link and Cullen 1986; Miller 1976; Monahan 1981; Monahan and Steadman 1983; Morse 1978, 1982; Rabkin 1979; Shah 1974, 1978; Warren 1977, 1982).

Recently some social scientists of this tradition have reversed their position on the basis of new, more sophisticated studies (Monahan 1992; Hodgins 1993). These studies have found a modest association between major mental illness and violence which cannot be explained away as spurious with demographic and historical controls. This paper discusses their findings and further examines social factors framing the relationship between the two variables. It suggests that, to understand the relationship, socializing conditions and intervening experiences must be taken into account more fully. It examines unanswered questions about those conditions and experiences, and proposes a causal model which suggests only indirect and contingent paths between mental illness and violence. But first, this paper briefly reviews earlier studies supporting the stereotype and the social science critique of their weaknesses, and describes in greater detail the two recent research projects which have underpinned the social scientists' reversal.

EARLIER STUDIES

Research supporting the stereotype of violent mentally ill persons offered three

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types of evidence: (1) reports of dangerous behavior among mental patients prior to, during, and after hospitalization (Hiday 1988; Lagos et al. 1977; McNeil and Binder 1986; Rofman et al. 1980; Tardiff and Sweillam 1980; Yesavage et al. 1982); (2) high rates of mental illness among jail inmates (Lamb and Grant 1982, 1983; Swank and Winer 1976; Valdiserri, Carroll, and Hartl 1986; Washington and Diamond 1985); and (3) higher rates of arrest among mental patients than among the general population (Durbin, Pasework, and Albers 1977; Giovannoni and Gurel 1967; Schuerman and Kobrin 1984; Sosowsky 1980).

A number of social scientists challenged this evidence, pointing out that the data were not valid to answer the question of the relative violence of the mentally ill because of major methodological flaws in the sampling of mentally ill persons and comparison groups, and in the measurement of violence and mental illness. More specifically, they contended that mental patients were far from representative of all mentally-disordered persons; that the general population was not an appropriate comparison group, especially not for mental patients discharged from state hospitals, who typically constituted the mentally-disordered samples; that dangerousness measures, often derived from legal and medical documents, were unreliable, poorly defined, and frequently too broad; that there was no control group with which to compare levels of dangerousness; and that arrests and the condition of being an inmate were inadequate measures of violence (Hiday 1992, 1988; Mulvey and Lidz 1993; Monahan 1981; Monahan and Steadman 1983; Rabkin 1979; Shah 1974; Steadman, Cocozza, and Melick 1978).

With similar data but improved methodology, some social scientists demonstrated that arrest rate differences between mentally ill patients and the general population disappeared when age, gender, socioeconomic status, and arrest history were controlled (Melick, Steadman, and Cocozza 1979; Steadman et al. 1978; Steadman and Felson 1984; Steadman and Ribner 1982). Nonetheless, these studies as well were unable to evaluate fully the question of the relative violence of the mentally ill since the researchers did not have large, random surveys of communities to identify reliably both treated and untreated cases of mental illness, and to assess violence reliably among both non-mentally ill and mentally ill persons.

THE NEW EVIDENCE

Recently, two separate teams of social science researchers creatively adapted large psychiatric epidemiological surveys, which were designed for other purposes but which had reliable measures of treated and untreated mental illness, to address the question of the relative violence of the mentally ill. Although their violence measures indicate only the presence or absence of a few major violent behaviors, these studies represent an important advance, for they provide the first estimates of violence levels in the community among both non-mentally ill and mentally ill persons.

One team, led by Jeffrey Swanson (1994, 1993; Swanson et al. 1990), analyzed the Epidemiologic Catchment Area (ECA) data which reliably identified in the general population persons meeting psychiatric diagnostic criteria for the major psychoses and a number of other mental disorders (Robins et al. 1981; Robins and Regier 1991). Swanson and his colleagues generated a measure of violence from items embedded in the symptom criteria of antisocial personality and alcohol abuse/dependence disorders.[1] They found that most mentally ill people were not violent; only a small minority with major mental illness (7%) committed any violent acts in the previous year. This rate of violence, however, is higher than for those who do not meet any of the diagnostic criteria (2%). They also found that substance abuse/dependence carried much higher prevalence rates of violence than major mental illness (alcohol, 25%; drug, 35%), and that the comorbidity of major mental illness with substance abuse raised the rate of violence (29%) above mental illness alone. These results held with controls for age, gender, marital status, and SES. In terms of relative risks for violence, major mental illness was not as important as being young, male, single, lower class, and substance abusing or substance dependent.

The other team led by Bruce Link (Link and Stueve 1994; Link, Andrews, and Cullen 1992) used data from a survey of psychiatric patients and community residents, designed as a methods study to compare one-month and

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one-year versions of the Psychiatric Epidemiology Research Interview (PERI, Dohrenwend et al. 1980). The survey contained five items measuring recent and past self-reported violence.[2] To these they added official lifetime total arrests and arrests for violent offenses. To the survey's controls for individual sociodemographic characteristics and need for approval, they added controls for community violence and community social context. Their data indicated that new, ongoing, and former patients had substantially higher rates of violence than never-treated community members. Narrowing their analysis to recent violence and to recent psychotic symptomatology as measured by the PERI scale, all differences between patient groups and the never-treated community sample disappeared. In other words, psychotic symptoms, not patient status, predicted violence. Furthermore, they found that psychotic symptoms significantly predicted violence in the never-treated group. Swanson (1994) has since supported the importance of active psychotic symptoms in finding that ECA ex-inpatients with no arrest history and no psychopathological symptoms for one year were no more violent than those in the general population.

Carrying their analysis further, Link and Stueve (1994) tested the hypothesis that it is the nature and content of the psychotic episode which is important. They reasoned that it is not psychotic symptoms in general, such as odd delusions or hallucinations or disorganization, which are the connection to violent behavior, but rather that it is those psychotic symptoms which produce feelings of personal threat or involve intrusion of thoughts that can override self-control. When the disordered person believes s/he is gravely threatened by others who intend harm, and believes that others are dominating her/his mind, constraints on behavior are more likely to be overridden, and violence becomes more likely. Using the same data set with the same controls, but only three-symptom items indicative of threat/control-override, their hypothesis was supported: differences between patient and never-treated groups with regard to recent violence disappeared when the threat/control-override symptoms were controlled; and threat/control-override symptoms were significant predictors of recent violence even when other psychotic symptoms and the individual and community controls were held constant. Swanson et al. (1995) have since tested and supported this hypothesis with the ECA data.

Two points need to be emphasized about these recent epidemiological studies: (1) not all mentally ill persons have higher rates of violence, but only those who have major mental illness and recent psychotic symptomatology; and (2) the contribution to violence of major mental illness, current psychotic symptoms, or threat/control override symptoms is only modest. Other variables are much more strongly predictive: being a young, adult, single, male, of lower socioeconomic status, and being a substance abuser hold far greater risks of violence.

The Nature of the Relationship

These studies have established that there is a relationship between major mental illness and violence that cannot be explained by inadequate sampling or inappropriate comparison groups, but we still have much to decipher before we can understand the nature of the relationship. Most important to examine closely are four substantive areas[3]: (1) the direction of the association; (2) the situation in which violence occurs; (3) the role of alcohol and drug abuse; and (4) the role of cooccurring psychopathy or antisocial personality disorder.

The direction of the association between major mental illness and violence. Swanson and Link have shown the relationship to be between recent active symptomatology and recent violence, but without information on the timing or sequencing of events, we cannot know the direction of causality. Many have assumed it is from the illness or symptoms to violence (Bloom 1989; Hodgins 1993; Krakowski, Volavka, and Brizer 1986). Indeed, Link and Stueve (1994) hypothesize that the threat/control-override psychotic symptoms induce fear and disrupt internal controls to produce violence. A recent unpublished study with sequential data by Mulvey et al. (1994) gives some support to this view. They found that psychiatric symptomatology in mental patients at the time of evaluation in an emergency room was moderately predictive of violence in the ensuing six months, even when the patient's prior violence was controlled for. However, not all members of their sample carried a diagnosis of major mental

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illness, and not all symptoms were indicative of psychosis.

It may be that causality runs from violence to major mental illness. Violence may lead to fear, suspicion, and distrust as well as to head injuries, which may lead to mental illness. A number of studies have reported the high rates of victimization experienced by mentally ill persons, especially abuse as children and from spouses as adults (Bryer et al. 1987; Carmen, Rieker, and Mills 1984; Estroff and Zimmer 1994; Kessler and Magee 1994; Rose, Peabody, and Stratigeas 1991; Winfield et al. 1990). On the other hand, there may be a more complex, interactive relationship between violence and major mental disorder which produces future violence.

Mirowsky and Ross (1983) hypothesize and support with community survey data a link between victimization and paranoid beliefs which is embedded in the stratification system. They argue that persons in low socioeconomic positions are characterized by powerlessness, exploitation, and threat of victimization. Although Mirowsky and Ross were not addressing violence directly, much victimization is violent, especially among the poor (Drake et al. 1990; Dodge, Bates, and Pettit et al. 1990; Seltzer and Kalmuss 1988). These conditions of lower-class life produce a belief in external control which, with fear, leads to mistrust and suspicion of others (Mirowsky and Ross 1983). Persons with thought problems or delusions and hallucinations are particularly vulnerable, and their mistrust is likely to turn into paranoid beliefs (Mirowsky 1985). While Mirowsky did not tie these paranoid beliefs to violent physical assaults by mentally-disordered persons, the work of Link and his colleagues points to that connection. Furthermore, the prevalence of violence in the environment at the bottom of the stratification system makes it more likely that lower class persons with paranoid beliefs will choose violence as a solution to their perceived threats. Mental illness thus produces the delusions and hallucinations, but location in the stratification system produces the attendant distrust, suspicion, and socialization to physical aggression. The interaction between mental illness and underclass life (including the violence therein) results later in higher rates of violence among those with severe mental disorder.

The situation in which violence occurs. Although some scholars have pointed for more than a decade to the need for research on the situations surrounding violent incidents, few studies have been directed to situational variables (Felson and Steadman 1983; Steadman 1982; Steadman and Ribner 1982). Violence associated with mentally ill persons is generally described apart from any social or interpersonal interaction, and apart from the interpersonal history of those involved. Persons with major mental illness may often be provoked, or their symptomatology may lead to tense situations as nerves fray and as others try to persuade them to desist in the annoying behavior or to comply with treatment. These situations may then result in pushing, hitting, and fighting (Edwards and Reid 1983; Sheridan et al. 1990; Straznickas, McNiel, and Binder 1993), especially in environments where physical aggression is commonly used in disputes (Steadman 1982; Yesavage et al. 1983). Alternatively, the vulnerability of persons with major disorders may make them attractive objects for bullying which provokes them to defensive violent acts. A history of such bullying may make the mentally ill person more reactive, especially towards long-time perpetrators. In these situations, major mental illness and its symptomatology would be an indirect cause, rather than a direct cause, of violence. (Link et al. [1992] and Monahan [1992] also make this point.)

Estroff and Zimmer (1994) emphasize the context of violent incidents and point out that "violence seldom happens unilaterally." Through in-depth interviews with severely ill mental patients and their significant others, they found that mentally ill persons were often victims of violence by members of their close social networks. Estroff and Zimmer thus interpret many of their subjects' high scores on perception of hostility (the PERI paranoia subscale) to be based in reality—that is, on the violence and threatening relations actually experienced. They warn that aggressive behavior is too often blamed on mentally ill persons, and that the legitimate fears of the mentally disordered are too often considered symptoms of psychotic diagnosis because situations and interpersonal histories are not taken into account.

One can expect that mentally-disordered persons will react in the same manner and for the same reasons as non-mentally disordered persons in situations of unfairness, which

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by definition bullying and victimization meet. Thus, one can predict that persons with a major mental illness who suffer a history of being bullied and victimized will become predisposed to anticipating mistreatment, will appraise situations antagonistically, and will become angry more frequently than others not so provoked (Dodge et al. 1990; Novaco 1994). While anger is neither necessary nor sufficient for physical aggression, it is significantly related to violence among both mental patients and nonpatients (Dodge et al. 1990; Kay, Wolkenfeld, and Murrill 1988; Novaco 1994; Segal et al. 1988).

The role of alcohol and drug intoxication. In the studies of Swanson, Link, and their colleagues, we do not know whether alcohol or drug abuse was involved in the violent incidents, except in the case of one item in Swanson's study. However, we know that substance abuse—especially long-term abuse—is associated with violence (Collins and Schlenger 1988; Drake et al. 1990; Hodgins 1992; Lindqvist and Allebeck 1989; Pihl and Peterson 1993), and we know from Swanson and his colleagues (1990, 1993) that substance abuse/dependence increases the risk of violence among persons with major mental illness by a fourfold factor. Recent studies of jail and prison inmates which have used standardized, reliable diagnostic instruments and have reported higher prevalence rates of major mental disorders than in the general population (Coté and Hodgins 1990; Teplin 1990), have found on closer inspection that these mentally-disordered inmates tend to be substance abusers (Abram 1989; Abram and Teplin 1991; Coté and Hodgins 1990). For instance, city jail detainees with severe psychotic illness (schizophrenia or major affective disorder) in Teplin's sample (1990) were highly likely to be substance abusers or substance-dependent (84.8% with alcohol and 57.9% with drugs), and they were likely to have been using drugs or alcohol at the time of their arrests (56.5% drinking and 47.5% using drugs, according to Abram and Teplin 1991). Danish male homicide offenders with a major psychosis showed an even greater propensity to be intoxicated at the time of the homicide (89%; Gottlieb, Gabrielsen, and Kramp 1987). Since some persons with severe mental illness become intoxicated on alcohol in amounts less than that required for meeting diagnostic criteria for substance abuse (Drake et al. 1990), intoxication at the time of violent incidents needs to be examined as well as substance abuse/dependence, or we may miss an important explanation of the association between severe mental illness and violence.

The role of psychopathy/antisocial personality disorder (ASP).[4] Link did not measure ASP, and Swanson could not control for ASP since his primary measures of violence were symptoms of that disorder. It may be, however, that ASP cooccurs in the case of mentally-disordered persons who are violent, and that ASP rather than major mental illness or active psychosis propels the assaultive behavior. Four studies suggest that this may be the case although the first two do not separate violent from nonviolent offenders. Among their jail detainee sample, Abram and Teplin (1991) reported that just over two-thirds (68.7%) of those with a major mental illness also met criteria for a diagnosis of ASP. (Only 6% of those with major mental illness had neither substance abuse/dependence nor ASP.) Furthermore, Abram (1990) found among those with major depression that ASP was the primary syndrome in that it preceded both the substance abuse/dependence and the depression in terms of its appearance in their lives. Robins' (1993) analysis of ECA data also found ASP to be primary. They reported that the association between crime and major mental illness completely disappeared when controls were placed for ASP adult symptoms, childhood conduct disorder symptoms (generally considered integral to ASP diagnosis), and substance abuse. They concluded that the association of major mental illness with crime is not direct, but occurs when these disorders are secondary to ASP and substance abuse.

More directly, two studies linked psychopathy with violence among offenders with major mental disorders. Rice and Harris (1992) found ASP, as measured by the Hare Psychopathy Checklist (Revised Hare and Hart 1993), to predict violent recidivism among schizophrenic patients who were evaluated in a forensic psychiatric hospital. Hafner and Boker (1982) found persons with major mental illness who committed a violent crime over a 10-year period to be basically different from nonoffending mentally-disordered persons in having a history of antisocial traits which preceded the onset of their psychosis. These mentally ill offenders also tended to have delusions and fears, which

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suggests that it is only a certain type of psychotic individual who also is ASP who becomes violent.

It is not unlikely that both ASP and substance abuse are involved in the violent behavior of the severely mentally ill, given that almost 90 percent of active psychotic episodes occur among persons with three or more lifetime disorders (Kessler et al. 1994), and given that ASP and substance abuse are very closely associated (Boyd et al. 1984; Gorton and Akhtar 1990; Robins, Tipp, and Przybeck 1991).

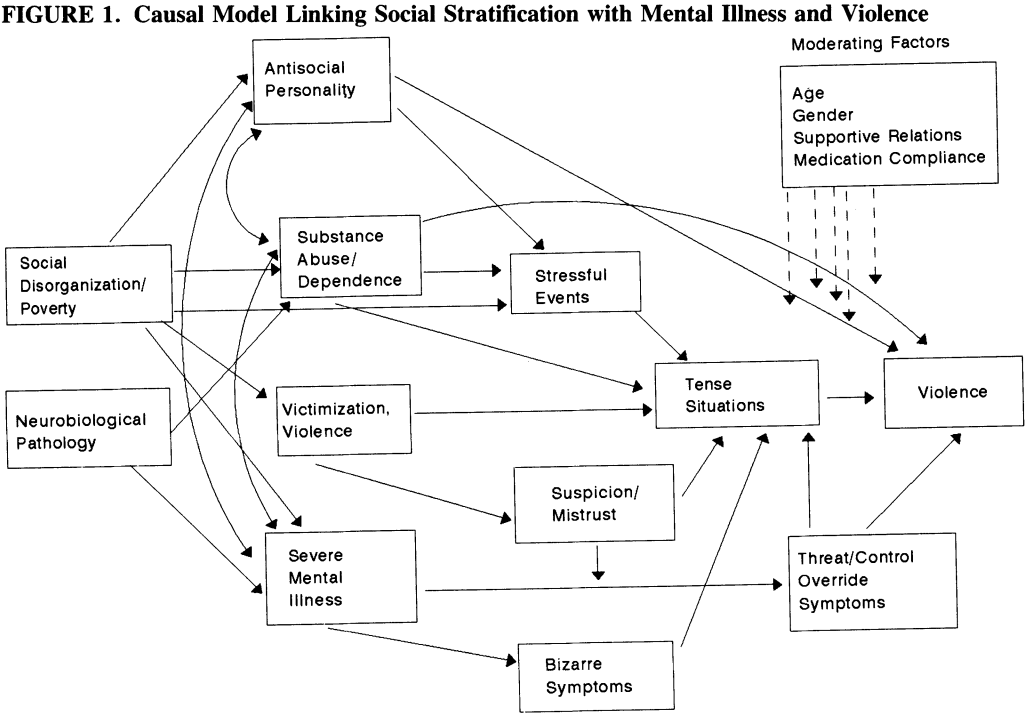
We need to examine these variables and their relation to mental illness and violence in the larger social context to be able to understand the association between mental illness and violence. Consideration of the larger social context is important not only to control the confounding potential of socioeconomic status, neighborhood stability, and community crime, as Swanson, Link, and their colleagues did, but also to ascertain on the individual level how position in the social stratification system affects the conditions of life such that individuals with severe mental illness become involved in violent incidents. Violence and some manifestations of mental illness largely grow from the structural arrangements in which individuals are embedded. These arrangements determine to a great extent the experiences, people, and situations to which individuals are exposed and from which they learn, as well as the resources and opportunities from which individuals are able to draw (Pearlin 1992).

MODELING THE RELATIONSHIP

As a first step in examining variables important to the relationship between mental illness and violence in the larger social context, we propose a causal model[5] (Figure 1). Our causal model links social stratification with both major mental illness and violence through the structured types of strains, events, situations, and persons an individual experiences as an integral part of life. It posits that the social context is responsible for violence committed by persons with severe mental illness because it shapes both their nonpsychotic behavior and their manifestations of active psychosis.

The model concentrates on explicating violence-inducing social forces, and neglects mediators such as compliance with appropriate medication and supportive instrumental and emotional relationships. Obviously, a complete model would have to include such

FIGURE 1. Causal Model Linking Social Stratification with Mental Illness and Violence



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mediators along with the demographic variables of age and gender, which have well-established relationships to violence. Figure 1 depicts them only as moderating factors which need to be considered in the production of violence. The model also focuses on severe mental illness or psychosis, separating it from other psychiatric Axis I and Axis II disorders, and from substance abuse/dependence and antisocial personality disorder, which both play important parts in the model.

The model begins with two exogenous variables: *social disorganization/poverty*, and *neurobiological pathology*. Neurobiological pathology, involving abnormalities in both brain function and structure, is causative in substance abuse/dependence and in severe mental illness. Several lines of research support these causal links. Behavioral genetics with family, twin, and adoption studies has provided strong evidence that genetic factors are operative in schizophrenia, affective disorders, and alcoholism (Cannon et al. 1994; Kelty et al. 1994; Kendler and Silverman 1991; Moldin 1994), and epidemiological studies have found prenatal infections and specific insults such as anoxia to be risk factors in the development of schizophrenia (Green, Satz, and Christenson 1994; Mednick et al. 1988; Mednick, Huttunen, and Machon 1994; Torrey et al. 1994). However, the exact mechanisms producing the disorders have been difficult to characterize. Indirect pharmacologic evidence suggests neurochemical explanations, but even there research has been unable to identify the specific defects responsible for behavioral manifestations of psychoses (Csernansky and Newcomer 1994; Martin, Owen, and Morihisa 1987). A newer line of research is pursuing theories that structural brain abnormalities play a part in vulnerability to schizophrenia (Cannon and Marco 1994; Csernansky and Newcomer 1994). While the available evidence shows that neurobiological pathology is causative, it also indicates that neurobiological pathology alone cannot account for the disorders. Our model suggests that social disorganization is another causative agent in severe mental illness and substance abuse/dependence, affecting the development and course of these disorders (Cohen 1993; Dohrenwend et al. 1992).

Social disorganization is found in conditions of poverty, but it is not merely a matter of low income or loss of income. Rather, it is the condition of having extremely low income for a large percentage of one's life and of what that means in today's society: living with constant deprivation, lacking hope of having anything better, and believing in an inexplicable world where external forces arbitrarily determine what outcomes occur, outcomes that are too often negative and painful. More importantly, social disorganization is the breakdown of family and other micro-institutions which give meaning and sustain the individual. Thus, individuals living in these conditions lose their moorings, live in a state of anomie, and have increasingly fewer chances to overcome their current poverty and deprivation, especially by legal means. These individuals have little sense of control, and few constructive ways of expressing anger and fear. Families in social disorganization tend to be fatherless, and to offer little shelter from a hostile world and little guidance to overcoming environmental deprivations. Communities in social disorganization are characterized by persistent poverty, inability to exert social control over their members, and few opportunities beyond menial or illegal jobs.

Since the early days of social science research, empirical studies have found mental illness, substance abuse, and other forms of deviance to be more frequent in conditions of poverty and social disorganization (Barker et al. 1992; Catalano 1991; Faris and Dunham 1939; Holzer et al. 1986; Leighton et al. 1963; Srole et al. 1962). And, since the early days of sociology, cultural norms and socioeconomic deprivation have been major explanations of the relationship (see Kohn [1972] and Wheaton [1980] for links to mental illness through distrust, fatalism, coping ability, and effort). More recently, stress theorists have pointed to the chronic strain of social disorganization and poverty as principal causes of stress. They have shown how long-term economic and social deprivation may lead directly and indirectly through life events to greater symptomatology (including substance abuse) and psychotic episodes in adults (Bruce, Takeuchi, and Leaf 1991; Catalano 1991; Catalano et al. 1993a,b; Cohen 1993; Dohrenwend 1990; Dohrenwend et al. 1992; Kessler 1982; Pearlin 1989; Pearlin et al. 1981). Even more recently, researchers have posited that both current and persistent poverty affect children as well as

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adults, demonstrating their impact on children's manifestations of mental disorder symptomatology (depression, anxiety, dependency, and antisocial behavior) through their detrimental effect on parental behavior (Avison 1993; McLeod and Shanahan 1993). Such childhood symptoms, though not indicative of major mental disorder and not set for life (Garmezy 1991), place these children at a disadvantage, as they go through life, in coping with adverse conditions, including the likely continuing strain of social disorganization and poverty and any major neurobiological pathology which may become active (Cohen 1993).

Severe mental illness, ASP, and substance abuse/dependence could each be predisposing, precipitating, or perpetuating factors in the other two (Gorton and Akhtar 1990); thus, there are no causal arrows from one of the three to any of the others. Since the model attempts to predict later violence, we need only note the interrelationships among the three (curved lines), and not tease out their complex associations.

The model indicates that social disorganization and the accompanying poverty lead to victimization and violence. Although there is debate in the literature as to whether absolute or relative poverty affects violence, both official records and survey data find violence higher in lower socioeconomic groups and in poverty areas (Barker et al. 1992; Dodge et al. 1990; Land, McCall, and Cohen 1990; Link et al. 1992; National Research Council 1993; Patterson 1991; Rosenberg and Fenley 1991; Seltzer and Kalmuss 1988; Swanson et al. 1990; Widom 1989). The violence occurs both inside the family in the form of spouse, child, and elder abuse, and outside the family from acquaintances and strangers, and among others the individual observes. Evidence from ECA data also points to recent economic hardship in the form of job loss as causing violence and being more predictive of violence than psychiatric disorder (Catalano et al. 1993a). Similarly, victimization, which incorporates not only violence but also other types of harm and exploitation, is more likely to occur among those living in poverty areas (Mirowsky 1985; Mirowsky and Ross 1983; National Research Council 1993; Rosenberg and Fenley 1991).

The model indicates that substance abuse/dependence and ASP lead directly to violence. Indeed, the criteria for each of these diagnoses include violent behaviors as well as other behaviors which are likely to lead to violence such as irritability, aggressiveness, and impulsivity (American Psychiatric Association 1987; Helzer, Burnam, and McEvoy 1991; Robins et al. 1991). They also lead to stressful events (negative life events) through the results of their respective behaviors. For instance, through intoxication, persons with substance abuse/dependence or ASP are more likely to be arrested, lose their jobs, experience divorce, and the like (Catalano et al. 1993b; Collins and Schlenger 1988).

In the model, social disorganization and poverty, because of the chronic strain they produce, lead to stressful events such as job loss and separation (Pearlin 1989, 1992; Wheaton 1980). Stressful events, in turn, lead directly to tense or conflictive situations which can result in violent outcomes (Catalano et al. 1993a; Levinson and Ramsey 1979; National Research Council 1993; Steadman and Ribner 1982). Tense or conflictive situations in the model are similar to Novaco's "provocation categories" (1994). They include situations in which recurrent problems emerge. Examples of these are when chronically scarce resources such as food, space, and spending money must be divided among members of a chaotic and congested household, and when goal-directed behavior is blocked and is seen to be inconsiderate, arbitrary, and unfair, as in the case of a family's attempts to thwart an alcoholic from meeting his buddies at a bar. Additional examples of problem-enhancing situations are a group demeaning, bullying, manipulating, or falsely accusing one of its members; group members becoming annoyed and irritated at bizarre symptoms of mentally ill persons; and others reacting with fear or coercive measures to the words and actions of a mentally-disordered person. These tense situations are more likely to erupt in violence under conditions where physical attack is an acceptable, if not a preferable, alternative in conflicts (National Research Council 1993; Rosenberg and Fenley 1991; Oliver 1994; Toch 1992; Yesavage et al. 1983).

Following Mirowsky and Ross (1983), the model posits that victimization and violence lead to a psychological belief system of suspicion/mistrust. The model shows that the belief system of suspicion/mistrust interacts with severe mental illness to produce the threat/control-override symptoms which lead

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to violence. Since most command hallucinations and threatening delusions do not lead to violence (Hellerstein, Frosch, and Koenigsberg 1987), more than these symptoms is required. One path from threat/control-override symptoms to violence is direct, but another goes through tense situations. The model also posits a third path from severe mental illness to violence—through bizarre symptoms which lead to tense situations as others try to check the individual in his behavior, or become annoyed by the behavior. The link from severe mental illness to violence in any case is only through active psychotic symptoms.

SUMMARY AND DISCUSSION

The model presented in this paper of the association between mental illness and violence posits that severe mental illness, even active psychosis, is not a sufficient cause of violence. Rather, for severe mental illness to lead to violence, social factors must intervene. The model postulates that social disorganization and poverty is a basic social cause, that it is the conditions of social disorganization and poverty which affect the course of major mental illness and produce the cooccurring antisocial personality and substance disorders, and the environment of victimization and violence. The model posits that it is when severe mental illness is combined with antisocial personality and substance disorders, and is shaped by an environment of violence, that the behavior of the severely mentally disordered is likely to become violent. The severely mentally ill become physically assaultive for one of three reasons: (1) they abuse substances and/or have an antisocial personality disorder, which lead to violence directly or indirectly through stressful events and tense situations (in any case it is the substance abuse and/or ASP, not the mental illness, propelling the violence); (2) they have active psychosis, which causes bizarre symptoms that lead to tense situations and ultimately to violence; (3) they have active psychosis which, in interaction with suspicion/mistrust, causes threat/control-override symptoms that lead to violence either directly or indirectly through tense situations. The tense situations are likely to turn into violent interactions because of the environment of violence/victimization in which they occur, an environment created by social disorganization and poverty.

Placing mental illness and violence in this social context gives a more balanced view than the dominant medical model's focus on the individual in etiology, prognosis and treatment. The model incorporates neurobiological causes of severe mental illness, but emphasizes the social nature of its course, manifestations, and links with violence. Where violence by severely mentally ill persons is not propelled by substance abuse/dependence or ASP, it arises in most cases out of tense social situations in which severely mentally ill persons and others interact. While a tense situation may be brought about because of the symptomatology of the mentally-disordered person, the interaction becomes violent because one or both parties learned from earlier experiences that pushing, shoving, hitting, and so on were acceptable methods of settling disputes, and failed to learn alternative conflict resolution techniques.

By developing this model of the association between mental illness and violence, we hope to direct research away from an overemphasis on intrapsychic forces with direct links to violence, and towards social forces which link severe mental illness and violence indirectly through multiple pathways. Such research requires longitudinal data with relatively frequent observations and reports from more than one source in order to capture the timing and sequencing of episodes of psychotic symptomatology, stressful events, tense situations, and incidents of violence, relevant characteristics of the immediate tense situation (including emotion, disagreement, provocation, and participants' conflict history), immediate and historical alcohol and drug abuse/dependence, and early and current experience of social disorganization and poverty in the family and neighborhood.

We also hope that the model and ensuing research can be used to guide clinicians to look for substance abuse/dependence, ASP, and violence/victimization in patients' early and present environments, especially among family and friends. Besides giving appropriate medication and seeking compliance, clinicians may do well to work with patients and their families on coping strategies, particularly conflict resolution and avoidance of tense situations. However, according to the model, preventive measures that reach be-

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yond the clinic will need to be employed if the link between major mental disorder and violence is to be severed. Such measures could include programs to teach conflict coping and prosocial skills to at-risk children and their parents as those developed by the Oregon Social Learning Center (Dishion, Patterson, and Kavanagh 1992; Tremblay et al. 1992) or more general programs aimed at strengthening families and integrating communities. More basic alleviation of social disorganization and poverty will require larger-scale political and economic action.

Finally, we hope that the model and ensuing research can be used to allay the public's fears of mentally ill persons by locating the cause of violence among the mentally ill in social forces. Reassurance of the public is particularly important now that an epidemiological association between violence and active symptoms of severe mental illness has been established.

NOTES

1. A respondent was rated violent for having done any of the following in the previous year: having used a weapon such as a stick, knife, or gun in a fight (except in the occupational line of duty); having been in more than one fight that came to blows other than with spouse or partner; having spanked or hit a child hard enough so that s/he had bruises, having had to stay in bed or see a doctor; having hit or thrown things at spouse/partner, and having hit or thrown things first on more than one occasion, regardless of who started the argument; and having gotten into physical fights while drinking.
2. The items were: hitting in past month/year, fighting in past five years, weapon use in past five years, ever hurting someone badly in a fight, and ever being arrested.
3. A fifth area needing investigation is the frequency and severity of violence. Our measurement has not allowed us to know how often the violence occurs or how much harm is perpetrated by the violence. It may be that, although more mentally ill people are violent, the violent non-mentally ill are more *frequently* violent and/or their violence does more physical harm. Data concerning these aspects of violent behavior would give us more information and a better understanding of the relationship between violence and mental illness. Current research studies (Lidz, Mulvey, and Gardner 1993; Monahan and Steadman 1994) should provide such data.
4. Antisocial personality disorder (ASP) is a recognized Axis II diagnosis of the American Psychiatric Association, characterized by violation of social norms across many areas, including irresponsibility and aggressiveness towards others beginning in childhood and continuing into adulthood (Robins et al. 1991). As with other personality disorders, there is much comorbidity with Axis I disorders (Gorton and Akhtar 1990). The diagnosis is faulted for being no more than a medicalization of bad behavior. Furthermore, there have been major problems with both validity and reliability in its diagnosis (Hart, Hare, and Forth 1994); and attempts to link ASP with crime and violence can easily fall into a tautology: being an offender or engaging in violence leads to a diagnosis of ASP; then ASP is said to predict crime and violence. Ongoing empirical work by Hare and Hart and their associates (1993, 1994) has shown an association between psychopathy (their preferred term) and violence while avoiding the tautology. They measure two stable factors underlying psychopathy/ASP, only one of which includes violent and/or criminal behavior. The two factors are: (1) interpersonal and affective characteristics (e.g., superficiality, grandiosity, manipulativeness, irresponsibility, and lack of remorse and empathy); and (2) impulsive, antisocial and unstable lifestyle (including violent and criminal behavior). They have found that the affective-interpersonal factor is as predictive of violence as is the social deviance factor (Hart et al. 1994).
5. Causal modelling is a formal methodology employed to test for theorized causal inference in situations where experimentation is impossible. We use a causal model because it best explicates our theory of the network of causal relations between important variables linked with each other in producing the association between severe mental illness and violence. Causal modeling forces specification of assumptions and develops implications that are not obvious which, in verbal theorizing, are often hidden. It is an important step in guiding research because it directs attention to variables needing measurement and can be translated into mathematical equations to test the theory's predictions with statistical procedures (Blalock 1961, 1969; Heise 1975).

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